

Floating Point to and from Hexadecimal Conversion

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Description

The program Fpconvert converts floating-point numbers to and from their hexadecimal representations. It supports both 64 bit and 32 bit floating-point values according IEEE 754.

The screenshot shows the 'Floating Point Conversion' application window. It features a 'Value' input field containing '47.12' and a 'Convert' button. Below this, a row of fields displays the conversion result: a '+' sign, the hexadecimal string '78F5C28F5C28F', the decimal '404', the exponent '5', and the full IEEE 754 double representation '+47.11999893188'. The application then provides conversion options for different data formats, each with a 'Convert' button and checkboxes for 'Intel Byte order' and swapping units. For 'HEX Bytes, 64 Bit double', the hex bytes are 8F, C2, F5, 28, 5C, 8F, 47, 40. For 'HEX Words, 64 Bit double', the hex words are C28F, 28F5, 8F5C, 4047. For 'HEX Double Wordss, 64 Bit double', the hex double words are 28F5C28F and 40478F5C. For 'HEX Bytes, 32 Bit float', the hex bytes are E1, 7A, 3C, 42. For 'HEX Words, 32 Bit float', the hex words are 7AE1 and 423C. At the bottom right are 'About ...' and 'Exit' buttons.

Format	Value	Hex Representation	Options
Value	47.12	78F5C28F5C28F 404 5 +47.11999893188	
HEX Bytes, 64 Bit double	Convert	8F C2 F5 28 5C 8F 47 40	<input checked="" type="checkbox"/> Intel Byte order <input type="checkbox"/> swap Bytes <input type="checkbox"/> swap words <input type="checkbox"/> swap double words
HEX Words, 64 Bit double	Convert	C28F 28F5 8F5C 4047	<input checked="" type="checkbox"/> Intel Byte order <input type="checkbox"/> swap Bytes <input type="checkbox"/> swap words <input type="checkbox"/> swap double words
HEX Double Wordss, 64 Bit double	Convert	28F5C28F 40478F5C	<input checked="" type="checkbox"/> Intel Byte order <input type="checkbox"/> swap Bytes <input type="checkbox"/> swap words <input type="checkbox"/> swap double words
HEX Bytes, 32 Bit float	Convert	E1 7A 3C 42	<input checked="" type="checkbox"/> Intel Byte order <input type="checkbox"/> swap Bytes <input type="checkbox"/> swap words
HEX Words, 32 Bit float	Convert	7AE1 423C	<input checked="" type="checkbox"/> Intel Byte order <input type="checkbox"/> swap Bytes <input type="checkbox"/> swap words

Additionally you can swap bytes, words or double words. This helps analyzing values for different CPUs or when transmitted over a fieldbus, eg MODBUS. These often swap some parts of the binary representation.

When you convert a floating point value to hexadecimal and then convert it back you will often get a slightly different result.

Sample

+47.11	->	AE 47 E1 7A 14 8E 47 40
AE 47 E1 7A 14 8E 47 40	->	+47.1099999999999990
4A 70 3C 42	->	+47.1100006103515630

This also shows the precision of the floating point representation.

Installation

Simply copy the directory tree from the ZIP or tar.gz file to a suitable location.

To remove Fpconvert just remove the directories.

Internationalization

The current Fpconvert version 1.09 supports internationalization (I18N) for English and German.

The directory where you installed Fpconvert contains a subdirectory languages which in turn contains subdirectories for the different languages. Each such directory contains 2 files – Fpconvert.po and Fpconvert.mo. Without any command line parameters Fpconvert tries to select the operating system language or defaults to English. You may specify a different language by passing the language code to FP convert as a parameter as in

Fpconvert de

If you want Fpconvert to display in your own language all you have to do is the following

1. create a new subdirectory, e.g. fr (French) or fr_CA (Canadian French)
2. copy one of the Fpconvert.po files there
3. edit the translations using poedit and save to create Fpconvert.mo

Thereafter Fpconvert should be able to display your new translation.

BTW, please send me your translation for inclusion into the distribution. This will help many other users. THX

To get poedit please go to <http://sourceforge.net/projects/poedit/>.

Versions

March 2009	version 1.07 typos corrected
September 2008	version 1.06 typos corrected
March 2008	version 1.05 handling enter in top value field different typos corrected
Nov. 2007	version 1.04 typos corrected
March 2007	version 1.03 i18n support for English and German
Feb. 2007	version 1.02 completely rewritten GUI for Windows And Linux also shows NaN or else
Jan. 2005	version 1.01 rearranged conversion buttons
Nov. 2004	version 1.00

Warranty

FPconvert comes with absolutely no warranty.

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